

Rebuild/Repair Manual

35 Series Fifth Wheels

- FW35, FW33 & FW31 Series
- XA-351, XA-331 & XA-311 Series



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Introduction

This manual provides you information necessary to properly rebuild XA-351 Series, XA-331 Series, and XA-311 Series fifth wheels manufactured after May 1, 1996.

NOTE: For Holland Fifth Wheel replacement components contact SAF-HOLLAND Customer Service: 1-888-396-6501.

Warranty

Refer to the complete warranty for the country in which the product will be used. A copy of the written warranty is included with the fifth wheel and can also be found on the SAF-HOLLAND Web Site (www.safholland.us).

Notes, Cautions, and Warnings

You must read and understand all of the procedures presented in this manual before operating or starting work on any Holland 3500 series fifth wheel.

NOTE: In the United States, work shop safety requirements are defined by federal and/or state Occupational Safety and Health Act. Equivalent laws may exist in other countries. This manual is written based on the assumption that OSHA or other applicable employee safety regulations are followed by the location where work is performed.

IMPORTANT: Read this manual before using this product. Keep this manual in a safe location for future reference.

⚠ WARNING Failure to follow the instructions and safety precautions in this manual can result in death or serious injury.

Proper tools must be used to perform the rebuild procedures described in this manual.

Throughout this manual, you will notice the terms "NOTE," "IMPORTANT," "CAUTION," and "WARNING" followed by useful product information. So that you may better understand the manual, those terms are as follows:

NOTE: Includes additional information to enable accurate and easy performance of procedures.

IMPORTANT: Includes additional information that if not followed could lead to hindered product performance.

CAUTION Used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, may result in property damage.

⚠ CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

⚠ WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

1. Model Identification

Fifth wheel serial tags are located on the left side of the fifth wheel top plate above the fifth wheel bracket pin, or on the pickup ramps as shown in **(Figure 1)**.

The part number and serial number are listed on the tag as shown in **(Figure 2)**.

Figure 1

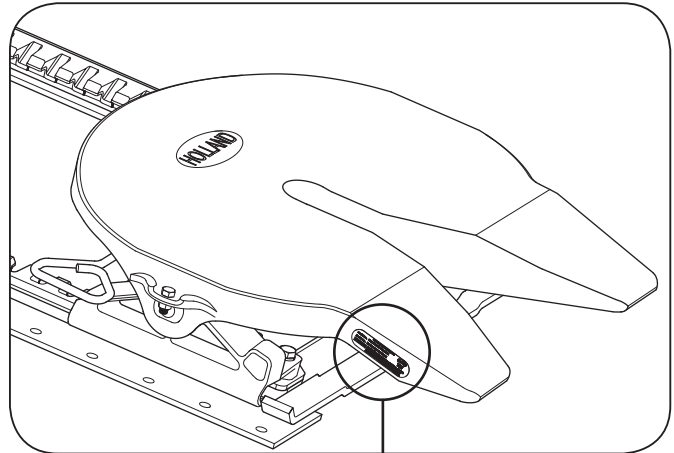
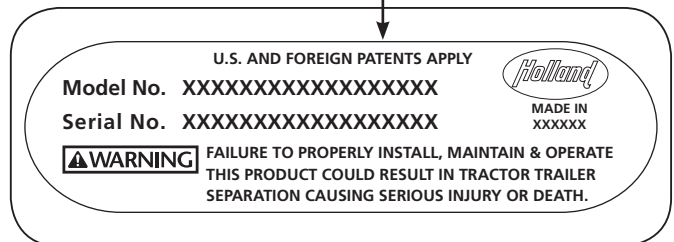


Figure 2



2. General Safety Instructions

Read and observe all Warning and Caution hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.

All fifth wheel operation and maintenance must be performed by a qualified technician using proper tools and safe procedures.

NOTE: Before rebuilding your Holland Fifth Wheel review the model number on the identification tag. This rebuild procedure applies only to model numbers starting with FW35, FW33, FW31, XA-351, XA-331, & XA-311.

IMPORTANT: You must read and understand all of the rebuild procedures contained in this manual before operating your fifth wheel.

⚠ WARNING Failure to follow all the rebuild procedures contained in this manual may cause a hazardous condition to develop which, if not avoided, may result in death or serious injury.

IMPORTANT: These instructions apply to the proper rebuild of XA-351 Series, XA-331 Series, and XA-311 Series fifth wheels only. There are other important checks, inspections, and procedures not listed here that are necessary, prudent, and/or required by law.

IMPORTANT: Prior to operation of the fifth wheel you must be thoroughly satisfied that the fifth wheel has been properly rebuilt and installed on the vehicle.

⚠ WARNING Failure to properly rebuild and install the fifth wheel can adversely affect performance resulting in tractor trailer separation which, if not avoided, may result in death or serious injury.

Refer to SAF-HOLLAND Installation Manual XL-FW10008IM-en-US (available on the Internet at www.safholland.us) for proper installation procedures.

We recommend only the use of SAF-HOLLAND Original Parts.

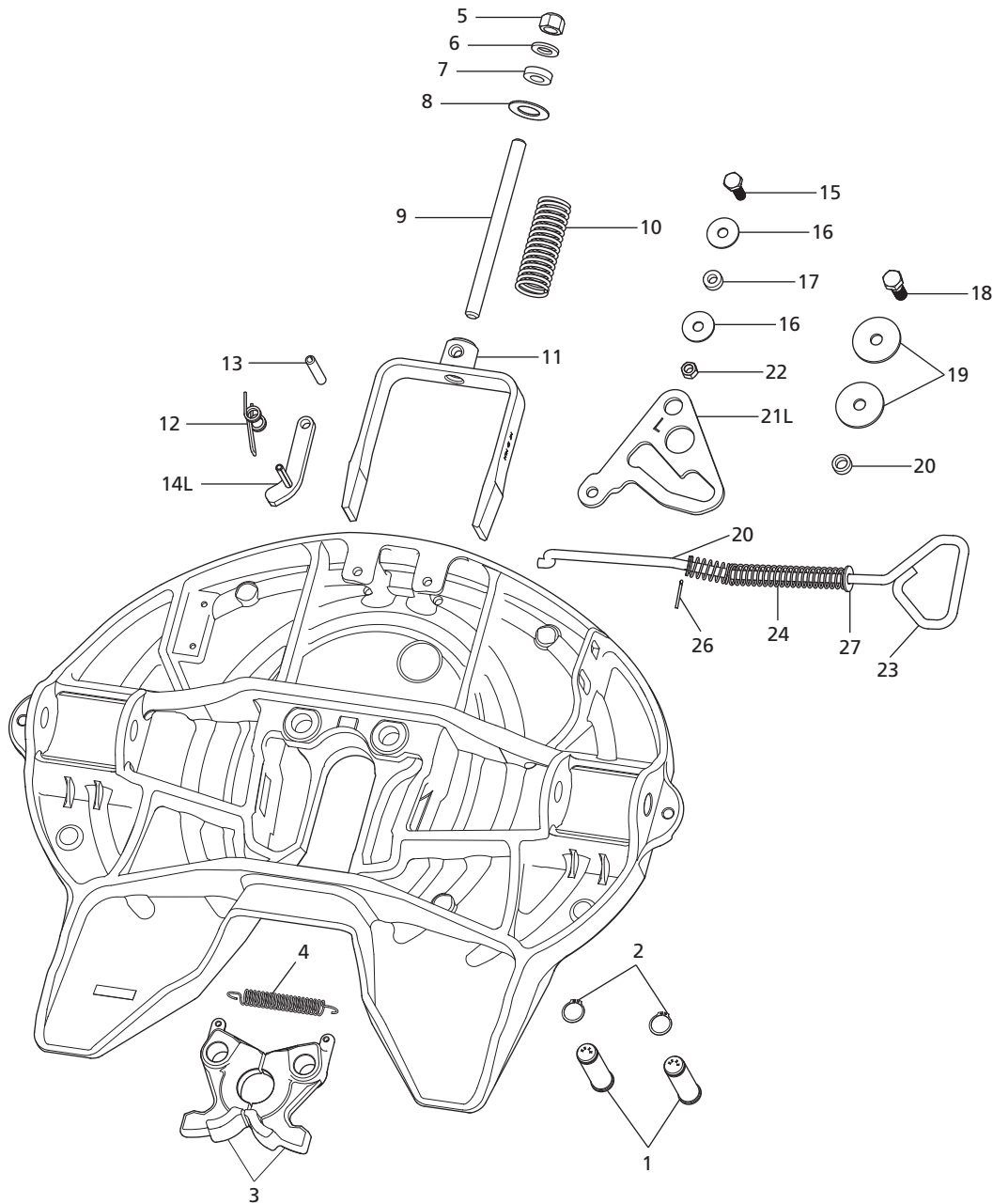
A list of SAF-HOLLAND technical support locations to supply SAF-HOLLAND Original Parts can be found at www.safholland.us or contact our customer service group at 1-888-396-6501

Updates to this manual will be published as necessary on the Internet at www.safholland.us.

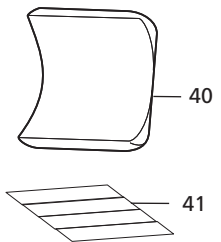
XA-351 Exploded View



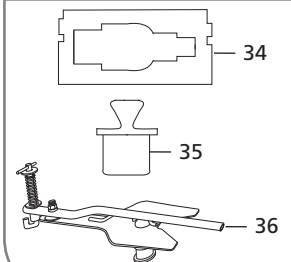
SAF-HOLLAND Group



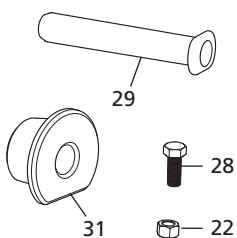
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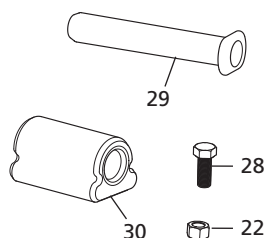
Service Tools



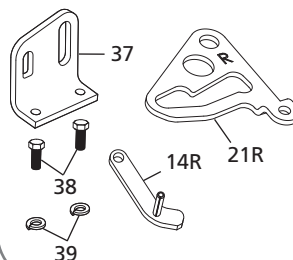
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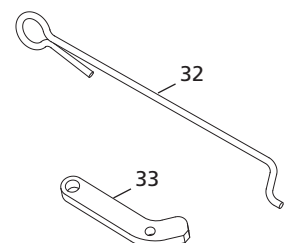
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Right Hand Cam Plate



Manual Secondary Lock



NO.	DESCRIPTION	PART NUMBER	QTY.
1	Lock Pin	XA-07292-1	2
2	Retaining Ring	XB-07398	2
3	Lock Jaw Set	XA-07296	1
4	Extension Spring	XB-07628	1
5	Locknut - 3/4" -16	XB-HNH-34-F	1
6	Washer - 1-1/2" o.D. x 13/16" i.D.	XB-PW-1316-112	1
7	Rubber Washer	XB-1127	1
8	Lock Adjustment Tag	XB-02312	1
9	Yoke Shaft	XA-1706	1
10	Compression Spring	XB-1505	1
11	Yoke	XA-07295	1
12	Torsion Spring	XB-2149	1
13	Roll Pin - 1/2" x 2-3/4"	XB-21-S-500-2750	1
14L	Secondary Lock - Left-Hand	XA-3542-L	1
14R	Secondary Lock - Right-Hand	XA-3542-R	1
15	Hex Cap Screw - 1/2"-20 x 1-3/4"	XB-2083	1
16	Washer - 1-3/4" o.D. x 9/16" i.D.	XB-08559	2
17	Roller - 1/2" i.D.	XA-1029	1
18	Hex Head Cap Screw - 5/8"-15 x 1-3/4"	XB-CX-58-F-134	1
19	Washer - 2-5/8" x 21/32"	XB-07431	2
20	Roller - 5/8" i.D.	XA-1507	1
21L	Cam plate - Left-Hand	XA-07150-L	1
21R	Cam plate - Right-Hand	XA-07150-R	1
22	Locknut - 1/2"-20 (2 add'l req'd for brackets)	XB-T-69-A	1
23	Release hHandle - Universal	XA-07151-1	1
24	Compression Spring	XB-07291	1
25	Washer - 1-1/16" o.D. x 17/32" i.D.	XB-PW-1732-1-116	1
26	Cotter Pin - 1/8" x 1-1/4"	XB-07508	1
27	Washer - 1-3/8" o.D. x 9/16" i.D.	XB-T-49	1
*28	Hex Head Cap Screw - 1/2"-20 x 1-1/4"	XB-C-95	2
*29	Bracket Pin	XE-06356-P	2
*30	Rubber Bushing (brkt's mfg'd after 5/82)	XB-0011-2	2
*31	Rubber Bushing (brk'ts mfg'd after 5/05)	XB-10605	4
**32	Manual SecondaryLock Release Handle	XA-3542-M	1
**33	Manual Secondary Lock	XA-3528	1
*34	Kingpin Gauge	TF-0110	1
*35	2" Lock Gauge (plug)	TF-TLN-0237	1
*36	Kingpin Lock Tester	TF-TLN-5001	1
*37	Handle Bracket	XA-11211	1
*38	HHCS - 3/8"-16 x 1"	XB-C-38-C-1	2
*39	3/8" Lock Washer	XB-T-61	2
*40	Pocket Insert	XD-08908	2
*41	Double Face Tape	N/A	N/A
*42	Lube Plate Replacement Kit (XA-331 Only)	RK-331-1	1

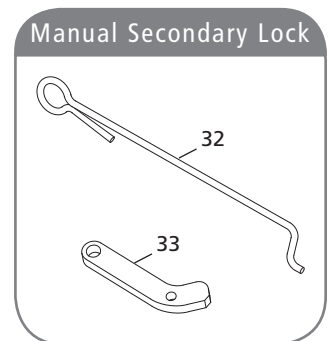
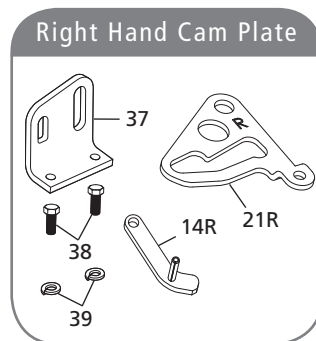
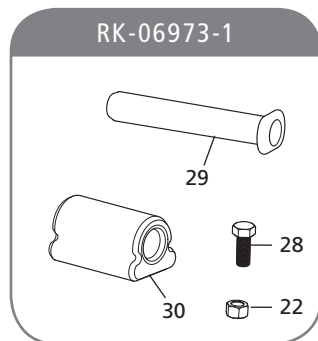
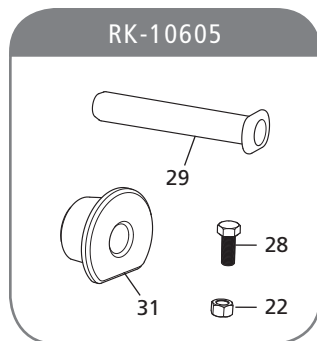
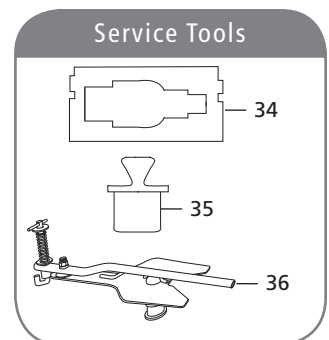
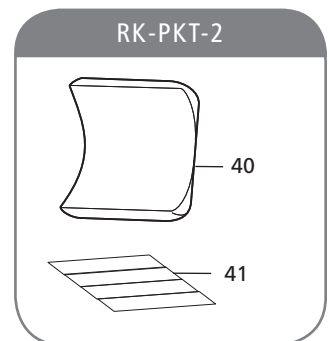
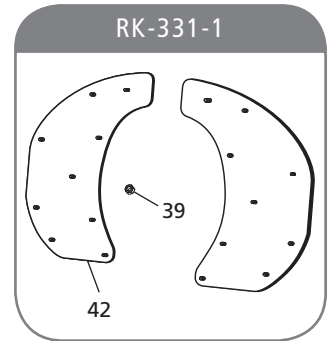
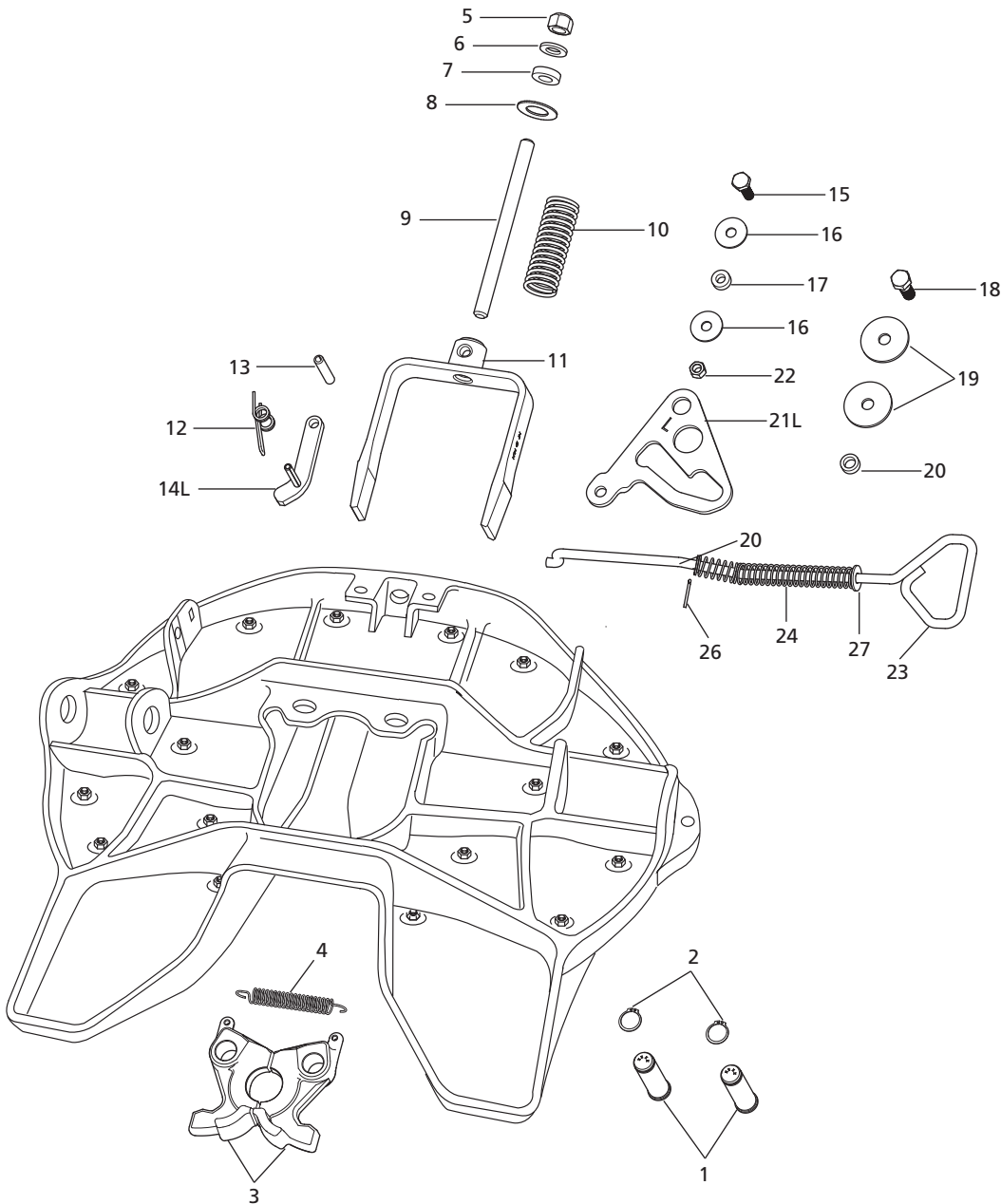
* Parts not included in rebuild kit (Available from your local SAF-HOLLAND Distributor.)

** Parts included in rebuild kits RK-351-A-L-02 and RK-351-A-02

XA-311 NoLube & XA-331 Low Lube Exploded View



SAF-HOLLAND Group





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XA-311 NoLube Parts List

NO.	DESCRIPTION	PART NUMBER	QTY.
1	Lock Pin	XA-10256	2
2	Retaining Ring	XA-07398	2
3	Lock Jaw Set	XA-10853-5P	1
4	Extension Spring	XB-07628	1
5	Locknut - 3/4" -16	XB-HNH-34-F	1
6	Washer - 1-1/2" O.D. x 13/16" I.D.	XB-PW-1316-112	1
7	Rubber Washer	XB-1127	1
8	Lock Adjustment Tag	XB-02312	1
9	Yoke Shaft	XA-1706	1
10	Compression Spring	XB-1505	1
11	Yoke	XA-10257	1
12	Torsion Spring	XB-2149	1
13	Roll Pin - 1/2" x 2-3/4"	XB-21-S-500-2750	1
14L	Secondary Lock - Left-Hand	XA-10261	1
14R	Secondary Lock - Right-Hand	XA-10451	1
15	Hex Cap Screw - 1/2" -20 x 1-3/4"	XB-2083	1
16	Washer - 1-3/4" O.D. x 9/16" I.D.	XB-10294	2
17	Roller - 1/2" I.D.	XA-10265	1
18	Hex Head Cap Screw - 5/8" -15 x 1-3/4"	XB-CX-58-F-134	1
19	Washer - 2-5/8" x 21/32"	XB-10259	2
20	Roller - 5/8" I.D.	XA-10343	1
21L	Cam Plate - Left-Hand	XA-10258	1
21R	Cam Plate - Right-Hand	XA-10450	1
22	Locknut - 1/2" -20 (2 Add'l Req'd For Brackets)	XB-T-69-A	1
23	Release Handle - Universal	XA-10344	1
24	Compression Spring	XB-07291	1
25	Washer - 1-1/16" O.D. x 5/8" I.D.	XB-PW-1732-1-116	1
26	Cotter Pin - 1/8" x 1-1/4"	XB-07508	1
27	Washer - 1-3/8" O.D. x 9/16" I.D.	XB-T-49	1
*28	Hex Head Cap Screw - 1/2" -20 x 1-1/4"	XB-C-95	2
*29	Bracket Pin	XE-06356	2
*30	Rubber Bushing (Brkt's Mfg'd After 5/82)	XB-0011-2	2
*31	Rubber Bushing (Brkt's Mfg'd After 5/05)	XB-10605	4
**32	Manual Secondary Lock Release Handle	XA-3542-M	1
**33	Manual Secondary Lock	XA-3528	1
*34	Kingpin Gauge	TF-0110	1
*35	2" Lock Gauge (Plug)	TF-TLN-0237	1
*36	Kingpin Lock Tester	TF-TLN-5001	1
*37	Handle Bracket	XA-11211	1
*38	HHCS - 3/8" -16 x 1"	XB-C-38-C-1	2
*39	3/8" Lock Washer	XB-T-61	2
*40	Pocket Insert	XD-08908	2
*41	Double Face Tape	N/A	N/A
*42	Lube Plate Replacement Kit	RK-331-1	1

* Parts not included in rebuild kit (Available from your local SAF-HOLLAND Distributor.)

** Parts included in rebuild kits RK-311-A-L-02 and RK-311-A-02

3. Top Plate Removal

1. Remove bracket pin retention bolts and nuts from both sides of fifth wheel top plate (**Figure 3**).
2. Using a pry bar, pull bracket retention pins out of fifth wheel top plate (**Figure 3**).
3. Using a lifting device capable of lifting 500 lbs. (227kg), remove top plate from mounting base. Place fifth wheel upside down on a flat, clean working area.

NOTE: Some fifth wheel assemblies have replaceable pocket inserts installed between fifth wheel top plate and mounting base. Take care when removing the fifth wheel top plate not to lose pocket inserts.

4. Completely remove all components from the fifth wheel and discard.

IMPORTANT: Your rebuild kit contains all components necessary to completely rebuild your fifth wheel top plate. DO NOT reuse old parts.

IMPORTANT: DO NOT remove the pocket inserts unless they are cracked or worn. Refer to Section 11 for inspection information.

NOTE: Lock pins may be difficult to dislodge and may require force to remove.

CAUTION Do not hit steel parts with a steel hammer as parts could break, sending flying steel fragments in any direction creating a hazard which, if not avoided, may result in minor to moderate injury.

5. Thoroughly steam clean top plate.
6. Inspect fifth wheel top plate for cracks and for loose lock pins. Fifth wheels with cracks or loose lock pins holes must be replaced.

WARNING Failure to replace fifth wheels with cracks or loose lock pin holes may result in tractor trailer separation which, if not avoided, could result in death or serious injury.

Figure 3

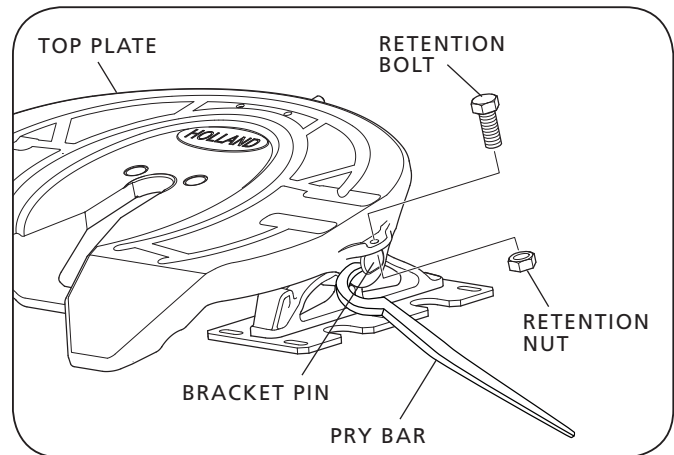
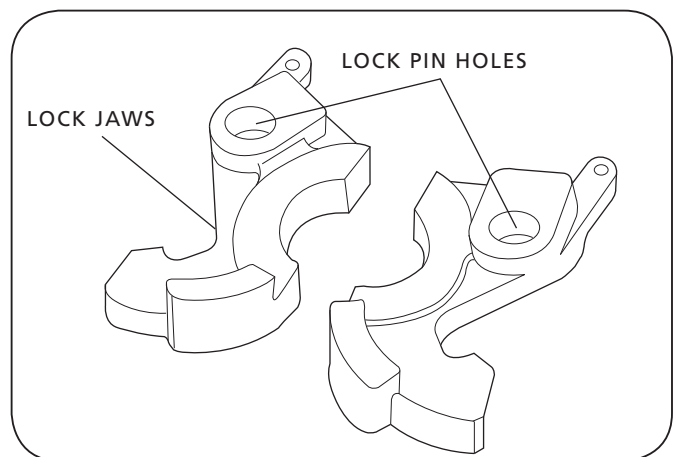


Figure 4



4. Lock Installation

1. Lubricate lock pin holes of lock jaws with Never-Seez (provided in kit.) (**Figure 4**).

NOTE: Lubrication is not necessary for the XA-311 NoLube installation.

IMPORTANT: Only use Never-Seez when lubricating lock pin holes of lock jaws. Do not use a substitute lubricant.

2. With the fifth wheel top plate upside down, align lock pin hole of lock jaws with lock pin holes in casting. Be certain to position lock jaws with kingpin guides facing bottom side of fifth wheel (**Figure 5**).
3. With lock jaws properly positioned in the fifth wheel casting, drive lock pins into lock jaws and casting holes until heads are flush with casting (**Figure 6**).
4. Install retaining rings on lock pins (**Figure 6**).
5. Insert a 2" diameter precision plug or the Holland Lock Gauge (Part No. TF-TLN-0237) into the lock jaws (**Figure 7**).

NOTE: You must use a Holland lock gauge (TF-0237) or a precision plug that is 2.000 +/- .005" for proper installation of the locking mechanism.

Figure 5

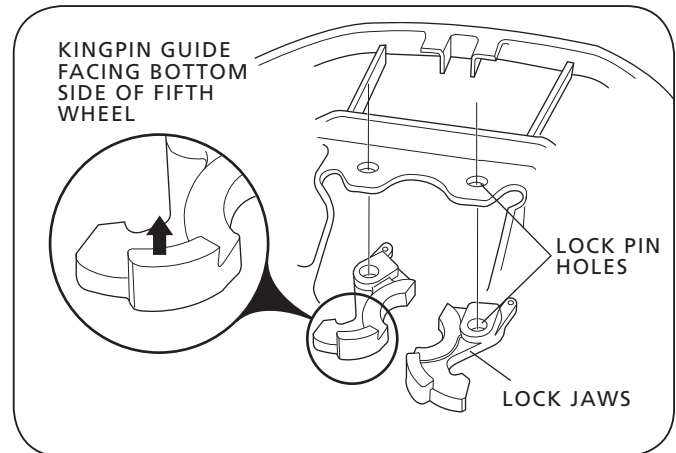


Figure 6

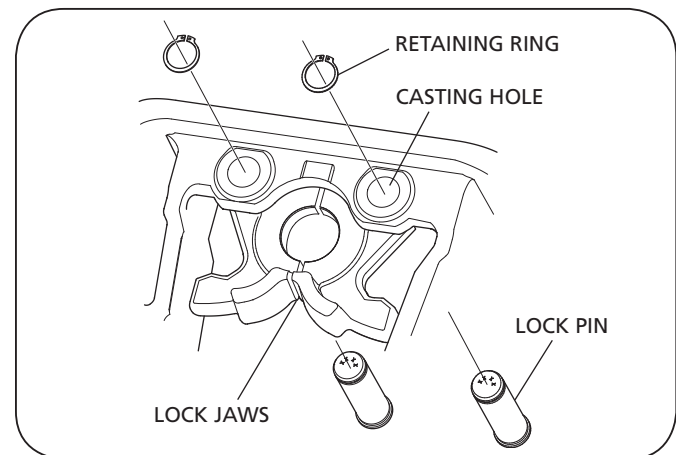
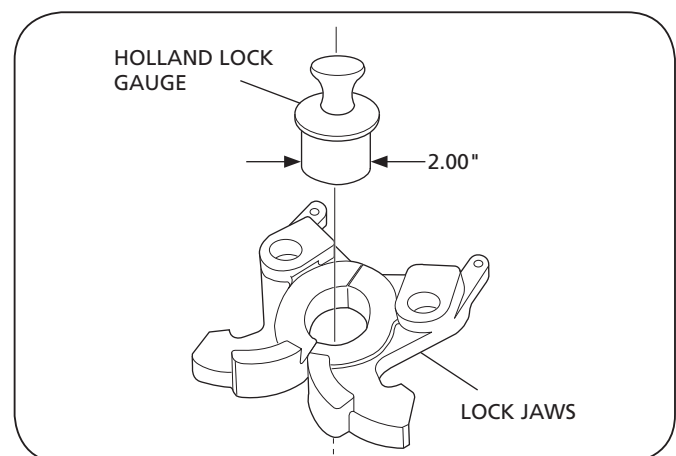


Figure 7



6. Yoke Installation

1. Lubricate tips of the yoke with a water-resistant lithium base grease (**Figure 8**).

NOTE: Lubrication is not necessary for the XA-311 NoLube installation.

2. With the threaded hole facing up, slide yoke (*Item 11*) into the casting. Tap lightly to seat yoke around lock jaws (**Figure 8**).
3. Inspect the amount of yoke tip engagement. The yoke tips must be flush with the end of the lock jaw or extend less than 1/2" (12mm) beyond the lock jaw (**Figure 9**).

NOTE: If the new yoke extends more than 1/2" (12mm) beyond the lock jaw **DO NOT USE**. Discard it and order Holland part number XA-07295-THK.

4. Install lock spring onto lock jaws (**Figure 10**).

Figure 8

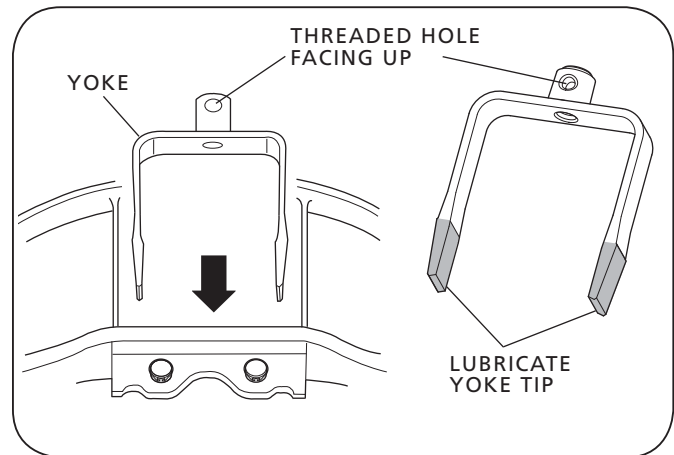


Figure 9

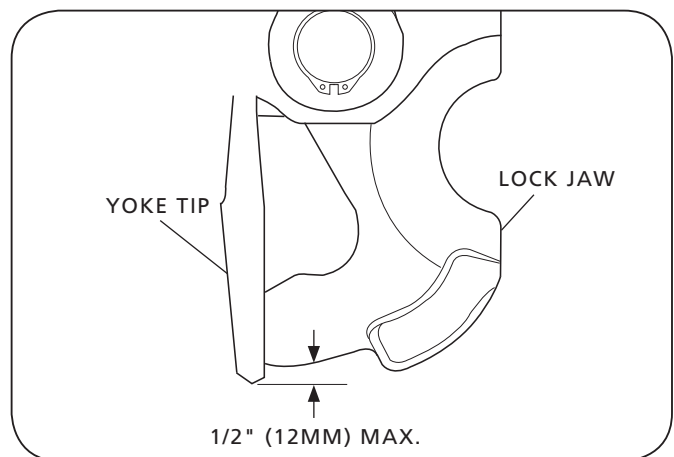
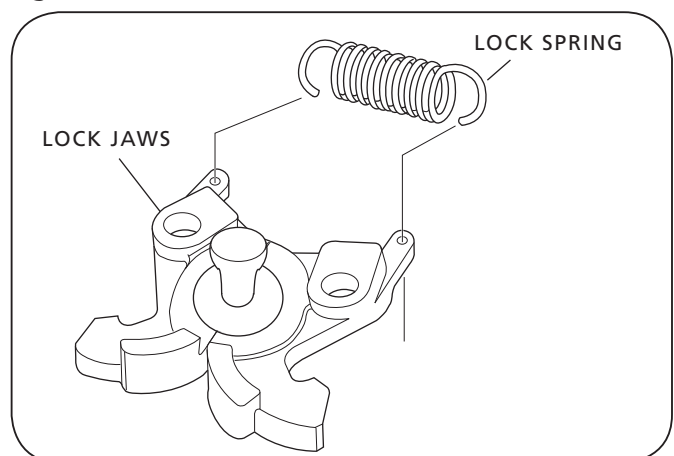


Figure 10



5. Install yoke spring (**Figure 11**).
6. Slide yoke shaft into casting, through the spring and into the yoke. Align recessed hole in the shaft with threaded hole in the yoke (**Figure 11**).
7. Slide lock adjustment tag, rubber washer and 13/16" washer onto yoke shaft (**Figure 11**).
8. Insert a lock nut on the end of the yoke shaft and turn by hand until tight (**Figure 11**).

7. Release Handle Installation

1. Slide release handle (*Item 23*) through hole in side of fifth wheel top plate (**Figure 12**).

LEFT-HAND RELEASE – Use Hole A

RIGHT-HAND RELEASE – Use Hole B

Figure 11

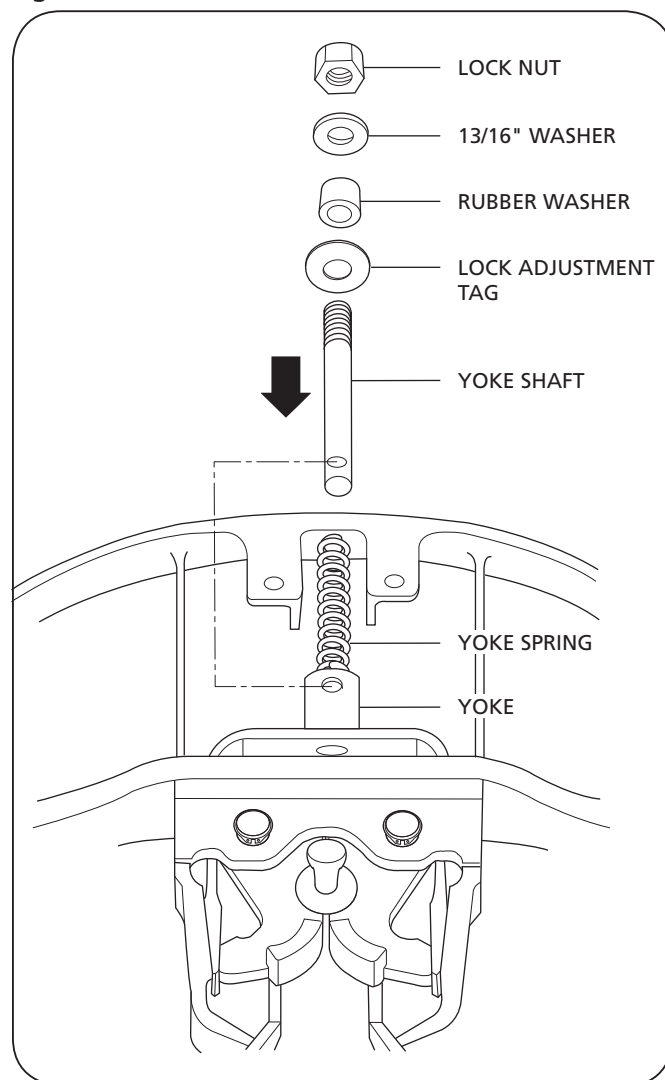
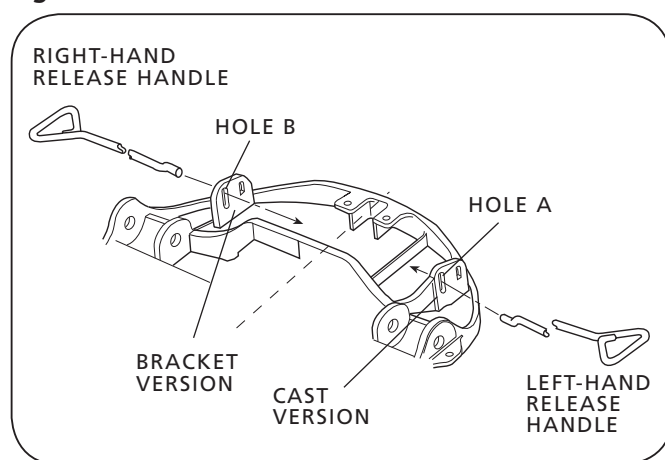


Figure 12



2. Slide 9/16" washer, handle spring and 17/32" washer in order over the "S" bend of the release handle (**Figure 13**).
3. Compress spring using the 17/32" washer until cotter pin hole is exposed (**Figure 13**).
4. Insert cotter pin into hole on the release handle, spread cotter pin and wrap it completely around release handle (**Figure 13**).

8. Cam Plate Installation

1. Inspect cam plate for burrs. Service as necessary.
2. Lubricate cam plate track and pivot hole with a water resistant lithium base grease (**Figure 14**).

NOTE: Lubrication is not necessary for the XA-311 NoLube installation.

3. Install cam plate onto handle "S" bend (**Figure 14**).
4. Position cam plate over fifth wheel top plate so that cam plate attachment hole lines up with the proper casting lug hole (**Figure 15**).
5. Place a 9/16" washer between cam plate and casting lug hole with rounded side of the washer facing cam plate (**Figure 15**).

NOTE: When installing washer rounded edge of the washer **must** always face cam plate.

Figure 13

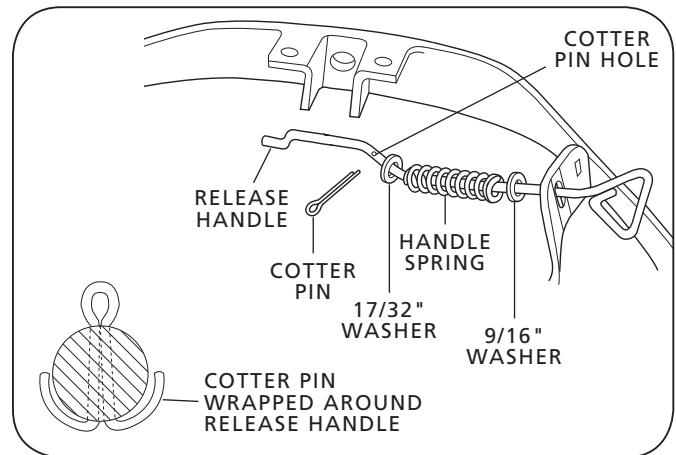


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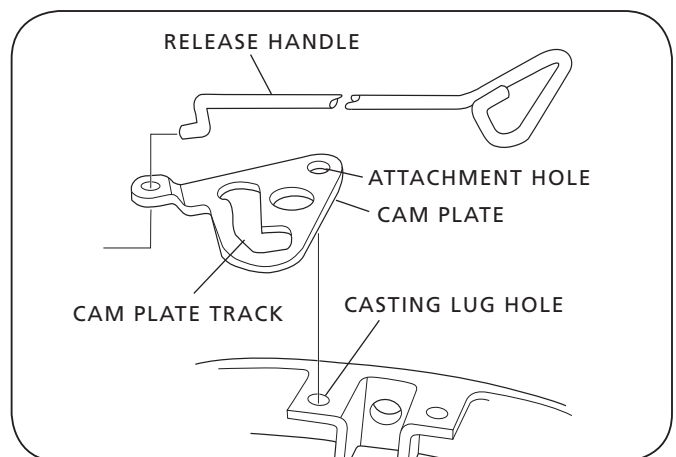
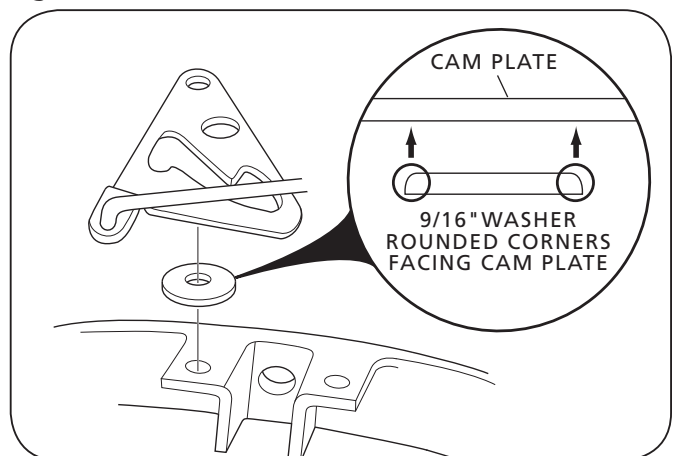
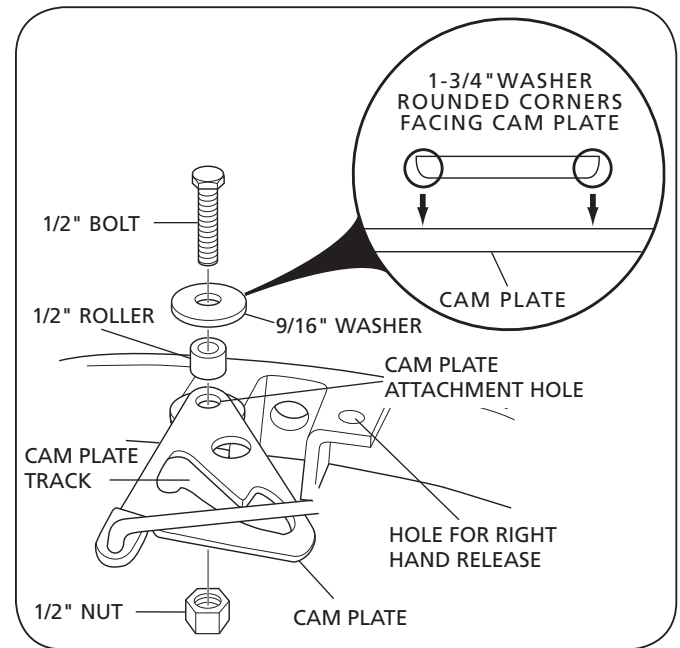
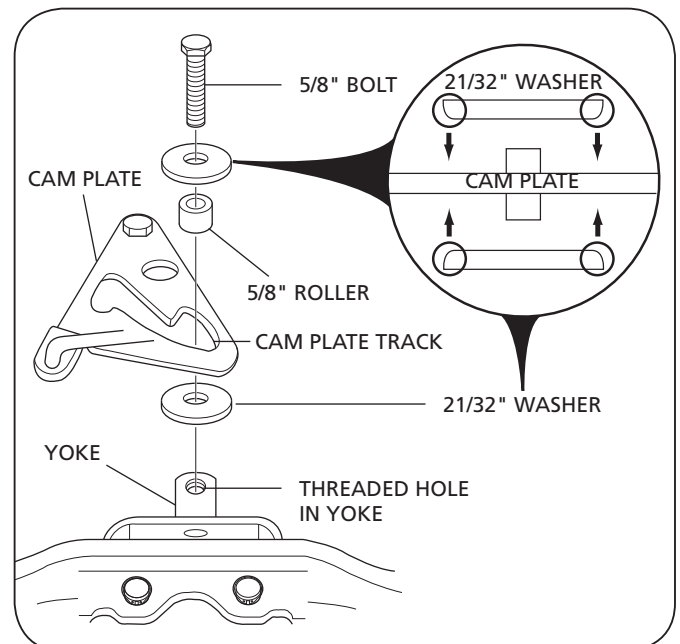


Figure 15



6. Install 1/2" roller into cam plate and place a second 9/16" washer on top of roller with rounded side facing cam plate (**Figure 16**).
7. Install 1/2" bolt (Item 15) through washers, roller and top plate lug (**Figure 16**).
8. Secure bolt with a 1/2" lock nut and tighten securely. Check for free movement of cam plate (**Figure 16**).
9. Align cam plate track over the threaded hole in the yoke (**Figure 16**).
10. Place a 21/32 ID x 2-5/8" OD washer between the yoke and cam plate with rounded side of washer facing cam plate (**Figure 17**).
11. Place a 5/8" roller into cam plate track, then place a second 21/32 ID x 2-5/8" OD washer over roller with the rounded side of washer facing the cam plate (**Figure 17**).
12. Check alignment of the recessed hole in yoke shaft.
13. Install 5/8" bolt through washers, roller, cam plate, washer and into threaded hole in the yoke (**Figure 17**).
14. Tighten bolt securely, then check for free movement of cam plate.

Figure 16

Figure 17


9. Secondary Lock Installation (Automatic Version)

1. Start roll pin into hole in the top plate opposite the cam attachment bolt (**Figure 18**).
2. Assemble secondary lock to the torsion spring (**Figure 18**).
3. Drive roll pin through spring and lock until flush with casting (**Figure 18**).
4. Check lock spring for tension and lock for free movement.

10. Secondary Lock Installation (Manual Version)

1. Pass "S" bend of manual secondary release handle through casting guide hole (**Figure 19**).
For left-hand release, use guide hole C.
For right-hand release, use guide hole D.
2. Pass "S" bend of release handle through small hole in the secondary lock (**Figure 19**).
3. Start roll pin into hole in top plate opposite cam attachment bolt (**Figure 18**).
4. Assemble secondary lock to the torsion spring (**Figure 18**).
5. Drive roll pin through spring and lock until flush with casting (**Figure 18**).
6. Check for proper spring tension and operation by pulling release handle and hooking it on casting, then unhooking handle and allowing spring to snap it closed.

Figure 18

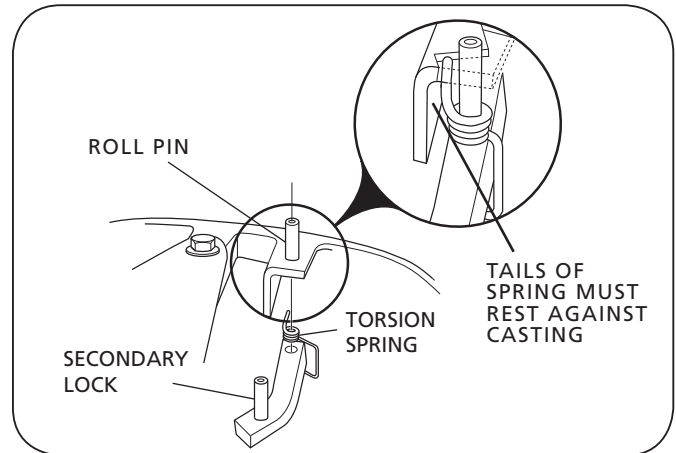
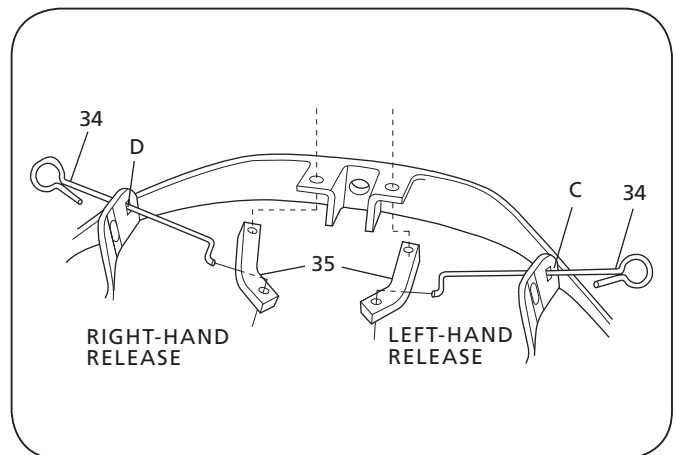


Figure 19



11. Top Plate Installation

1. Visually inspect both pocket inserts for excessive wear, chips, cracks or gouges. If any of these conditions are found, the pocket insert(s) must be replaced (**Figure 20**). Refer to Page 6 for kit ordering information.
2. If pocket inserts are dislodged from fifth wheel casting, clean pocket area of casting and apply a strip of double face tape in bottom of pockets. Install pocket inserts by pressing them down into the pocket areas (**Figure 21**).
3. Using a lifting device capable of lifting 500 lbs., install fifth wheel top plate onto its mounting base.
4. Install bracket pins through fifth wheel casting and mounting base and secure by installing the bracket pins retention bolts and nuts (**Figure 22**). Torque retention fasteners to manufacturer recommendation.

Figure 20

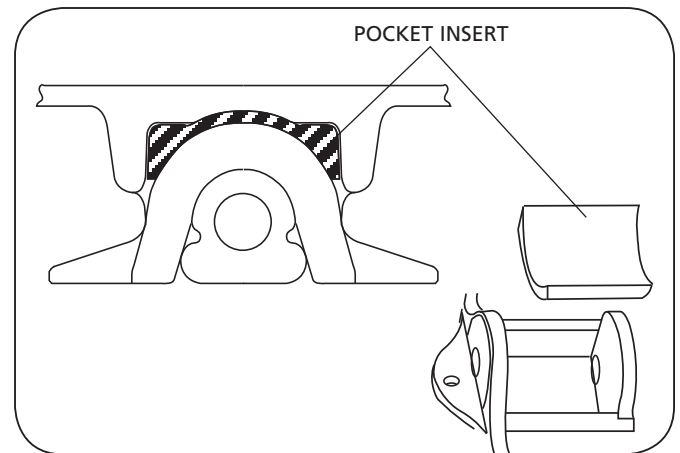


Figure 21

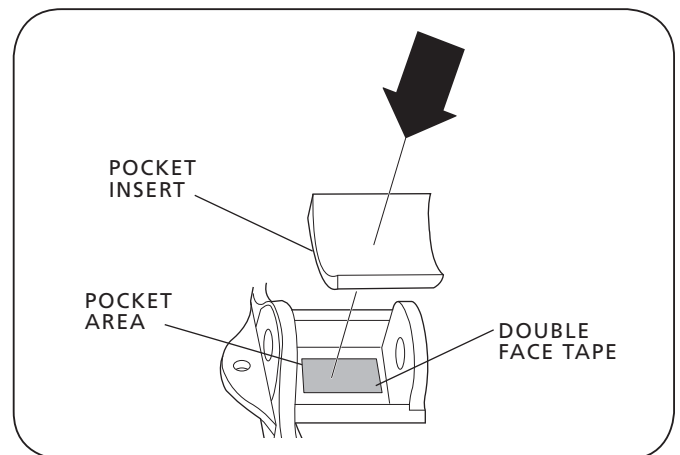
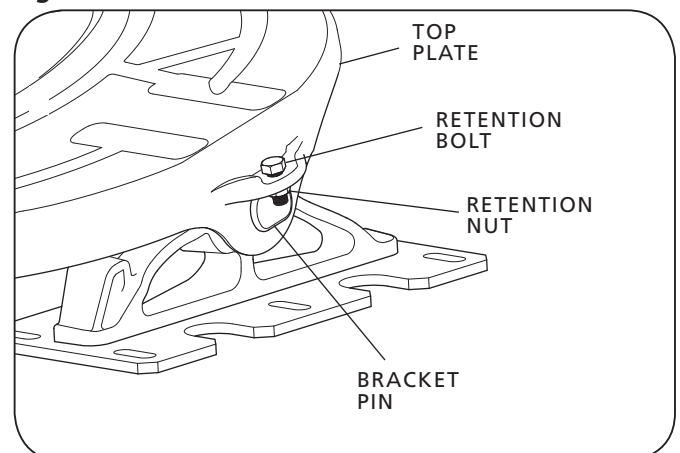


Figure 22



12. Fifth Wheel Adjustment

Fifth wheel adjustment should be performed at a minimum of every 60,000 miles (96,560km), or if excessive movement between kingpin and fifth wheel is noticed when driving the vehicle and when rebuilding the fifth wheel. To obtain proper adjustment SAF-HOLLAND recommends the use of the Holland Lock Tester (Part No. TF-TLN-5001).

1. If fifth wheel is locked, pull release handle to unlock fifth wheel.
2. Set lock tester on fifth wheel top plate as shown (**Figure 23**).
3. To lock fifth wheel, rotate handle on lock tester clockwise (**Figure 24**).
4. With locks closed around lock tester, position adjustment nut on yoke shaft so that it is slightly compressing rubber washer making it difficult to turn by hand.
5. Turn adjustment nut one additional full turn clockwise to further compress rubber bushing (**Figure 25**).

IMPORTANT: Over compressing the bushing with additional turns will take the fifth wheel out of proper adjustment and degrade the performance of the fifth wheel.

Figure 23

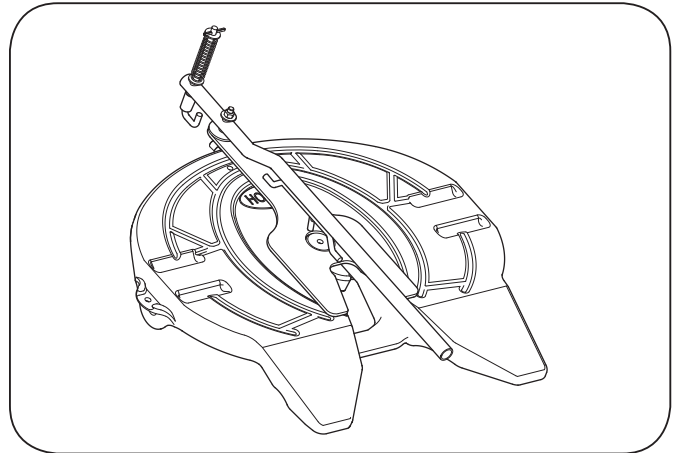


Figure 24

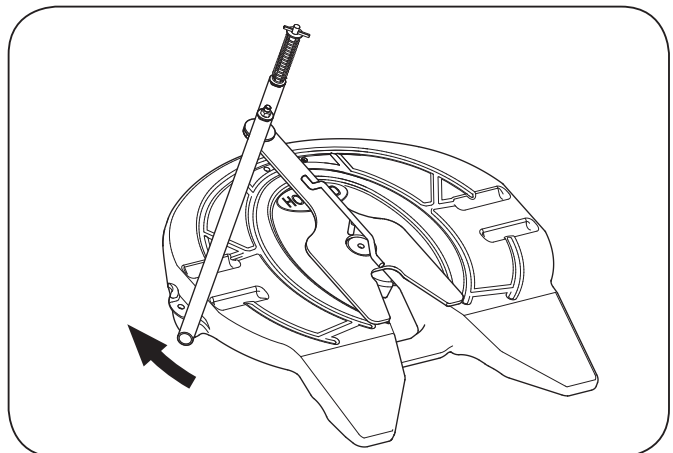
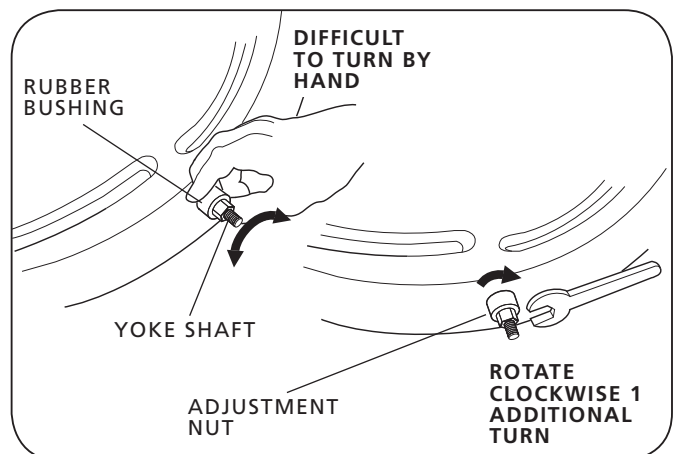


Figure 25



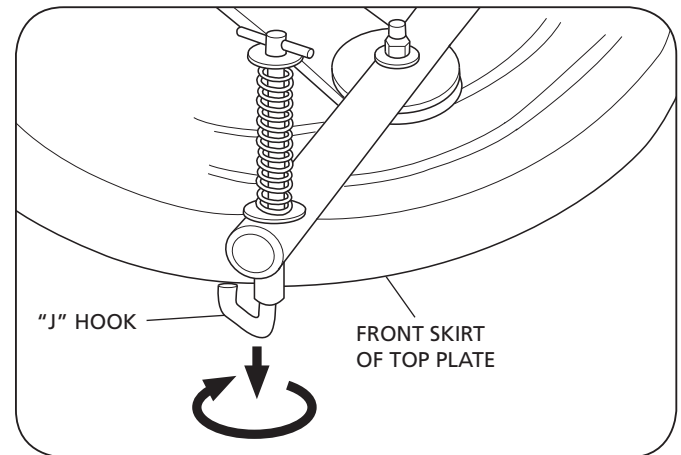
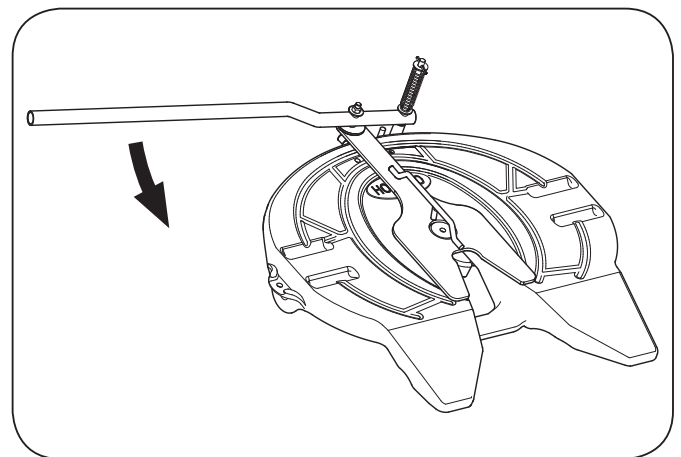
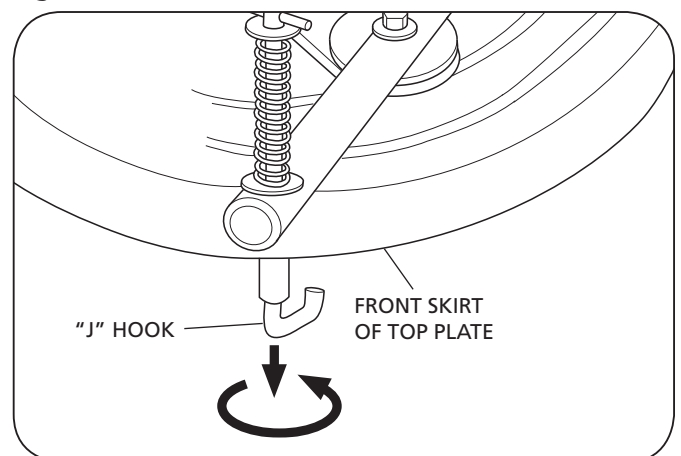
5. To unlock fifth wheel, push down and rotate "J" hook so that it locks under front skirt of fifth wheel top plate (**Figure 25**).
6. Pull release handle.
7. Rotate handle on lock tester counter clockwise (**Figure 26**).
8. Repeat coupling and uncoupling process with lock tester a minimum of 2 times to help "seat" yoke. Then recheck adjustment of fifth wheel.
9. With the fifth wheel unlocked, unhook "J" hook from under front skirt of fifth wheel top plate (**Figure 27**) and remove lock tester from fifth wheel.

IMPORTANT: Before using your fifth wheel, visually inspect all components of fifth wheel for proper operation while coupling and uncoupling fifth wheel with lock tester.

⚠ WARNING Failure to repair an improperly operating fifth wheel may result in tractor trailer separation which, if not avoided, could result in serious injury or death

IMPORTANT: Be sure to read and understand Fifth Wheel Operation Instructions published in XL-FW100090M-en-US prior to use.

⚠ WARNING Failure to read and understand Fifth Wheel Operation Instructions prior to use can result in improper operation of fifth wheel which, if not avoided, could result in death or serious injury.

Figure 25

Figure 26

Figure 27




From fifth wheel rebuild kits to suspension bushing repair kits, SAF-HOLLAND Original Parts are the same quality components used in the original component assembly.

SAF-HOLLAND Original Parts are tested and designed to provide maximum performance and durability. Will-fits, look-alikes or, worse yet, counterfeit parts will only limit the performance potential and could possibly void SAF-HOLLAND's warranty. Always be sure to spec SAF-HOLLAND Original Parts when servicing your SAF-HOLLAND product.

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